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WHAT THE WELL-DRESSED TROPICAL EXPLORER WILL WEAR

In the disease-breeding swamps of Brazilian jungles it is safer and more comfortable to wear these ponderous types of headgear than to be constantly swatting insects. The life of an explorer is no bed of roses! (See Bulletin No. 3).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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China's Great Wall Again Is the Frontier

CHINA'S Great Wall, glamorous to all who have studied geography, but usually considered significant only as a work of the dim past, has become a marker in recent news dispatches. With the fall of Chinchowfu to Japanese forces, the Chinese have moved south of the Wall, and that ancient barrier again forms the frontier between Chinese and enemy territory, as it did for centuries after its construction.

In a world of airplanes, bombs, heavy artillery and high explosives, the Great Wall of China is of no value as an obstacle to an enemy army. Because this is true, and has been true for a long time, the Great Wall has come to be looked upon by many as a prodigious folly. But in its day it was of incalculable value to the peace-loving Chinese, who were able for long periods to keep the "Northern Barbarians" out of their country.

Wall Probably Visible from the Moon

The Wall was effective because these enemies of the northern plains came against China with unorganized armies of cavalry, which, many times, beat ineffectively against the well-manned barrier. There were occasions, it is true, when the hordes broke through; but these forays, and the losses that resulted from them, emphasize the value of the Wall throughout the many years when it functioned successfully.

Astronomers say that the Great Wall is one of the few works of man on earth which would be discernible by the naked eye from the moon. No other single engineering feat of any age compares with it in size, extent, and construction difficulties. Seldom straight and seldom level for as much as a mile, the great rampart writhes its way across northern China like a gigantic serpent—traversing valleys, climbing steep slopes and even cliffs, ascending to mountain crests, crossing gorges, and taking up its way again beyond great rivers.

Starting at sea level at Shanhaikwan, on the Gulf of Chihli, it reaches an altitude of 9,900 feet among the mountains of western China. In the intervening area it crosses several mountain ranges quite or nearly a mile high. When the Wall reached a river, the usual plan was to construct parallel sections along both banks for a number of miles, thus affording an opportunity for defense.

Would Reach Half Across United States

Because parts of the Great Wall extend for hundreds of miles through country difficult of access and almost deserted, it has not been carefully surveyed or measured in recent times, and its exact length has not been known. Its Chinese name is "Wan-li-ch'ang-ch'eng," which means "10,000-li-long Rampart." As the li is approximately equal to one-third mile, this would indicate a length of 3,333 miles. Many writers discounted this name as one of picturesqueness, and estimated the Wall to be 1,500 to 2,000 miles long. One of the most recent investigators, however, estimates that, with all loops, cross-walls, and defensive stubs, the Wall is even longer, approximately 3,900 miles.

The Great Wall is not a single structure but a system with sections built at different times. Its magnitude can best be understood if it is imagined that it were taken bodily up and set down in the United States, with its eastern end at Philadelphia. This transplanted wall would extend westward to within 75 miles of

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BACK OF THESE MOUNTAINS BECKONS THE GREATEST UNEXPLORED AREA IN THE WORLD

The photograph shows the camp of the geological exploring party of the Byrd Antarctic Expedition at the foot of the Queen Maud Range, Antarctica. Only a pie-shaped wedge of the interior of Antarctica—embracing three routes to the South Pole—has been seen by man (See Bulletin No. 3).

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Palos, Spanish Port Whence Columbus Sailed

NEARLY four and a half centuries ago three small caravels, commanded by Christopher Columbus, spread their sails and glided slowly down the Río Tinto, off Palos, Spain, to the broad bosom of the unknown Atlantic. Seven months later, two of the caravels returned to Palos with news of a great discovery that eventually carried the name of this tiny fishing port in southwestern Spain to every part of the civilized world.

Next month a duplicate of the *Santa Maria*, the flagship of Columbus which did not return, will sail for America from Palos under the command of a crew of adventurous Spanish youths, who plan to bring their fragile 220-ton ship across the Atlantic, and then through the Great Lakes to Chicago for the 1933 exposition.

Harbor and Roadstead Silted Up

Palos, the point of embarkation of Columbus, and of those who follow in his footsteps, is an insignificant little village to-day, with hardly anything to remind it of its illustrious past.

If the modern *Santa Maria* wishes literally to re-enact the famous sailing of August 3, 1492, it will have to wait until the tide is at its height, because the old roadstead has long since silted up, and shipping which once plied between Palos and other ports of Europe now anchors off Huelva, on the near-by Odiel River.

When the wealth of the New World was realized, Seville was given the monopoly of trade with America, and then San Lucar, its nearest port to the sea, came into its own. Columbus put off from San Lucar on his third voyage, and Magellan's globe-girdling ships sailed from the same port. Palos, meanwhile, was neglected.

Palos de Moguer, or Palos de la Frontera, to call it by its two imposing Spanish names, had another big moment when Cortes chose it as a landing place in 1528 after his conquest of Mexico. Wagons loaded with loot of the empire of the Aztecs rumbled through its narrow streets, and dashing caballeros on beplumed horses awed the loiterers of the waterfronts.

But again other Spanish ports superseded it, and Palos continued a humdrum rôle as a fishing village.

New Statue of Columbus

In 1929 Palos came momentarily into the day's news when a colossal stone statute of Columbus, designed by an American, was dedicated on the exact spot where Columbus is said to have set sail for America. A detachment of American sailors took part in the exercises, and the rumble of drums awoke the echoes of the sleepy little fishing village which for 400 years had known few visitors.

Another reminder of Columbus in this region is the La Rábida Monastery, opposite the junction point of the Odiel and Tinto Rivers, about a mile and a quarter from Palos. La Rábida, now partly in ruins, played an important rôle in the discovery of America, for it was here that the adventurer Columbus found a sympathetic listener in Fray Juan Perez de Marchena, the prior of the monastery and once confessor of Queen Isabella. The prior induced the Queen to finance the voyage.

A stone from La Rábida Monastery will be carried in the hold of the new *Santa Maria* for the lighthouse memorial being erected to Columbus in Santo Domingo.

Pittsburgh, where it would branch. The northern section would pass near Youngstown and on into central Ohio. The "Southern Loop" would dip far into West Virginia, then turn west to meet the main wall near Columbus, Ohio. The rampart would then extend southwestward through Cincinnati and Louisville, to turn northwestward and recross the Ohio River at the southwest corner of Indiana.

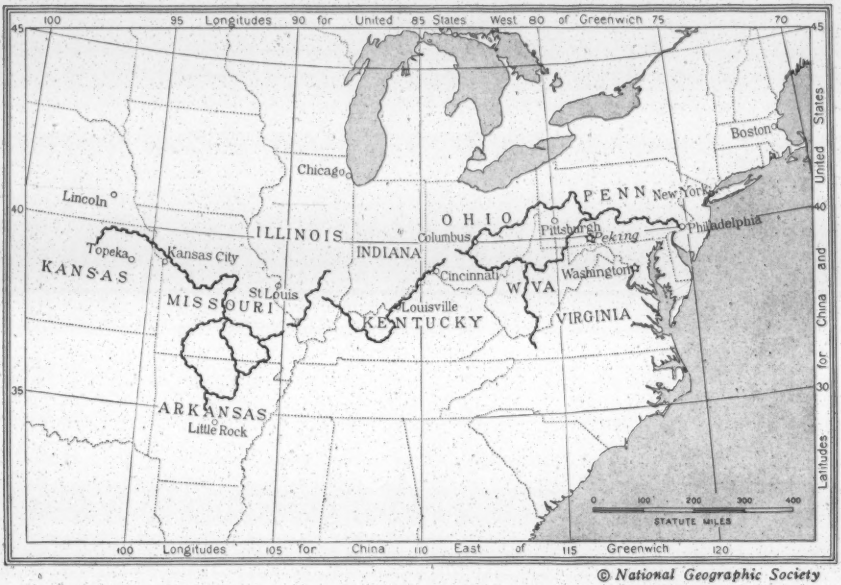
Traversing southern Illinois, the wall would cross the Mississippi River 100 miles below St. Louis, and, after describing two more loops embracing large areas of southern Missouri and northern Arkansas, would strike northwestward to come to an end 100 miles west of Topeka, Kansas. A wall halfway across the North American Continent!

The Great Wall is at its best in its eastern section. There its sheer faces, from 20 to 50 feet high, are constructed of carefully built masonry. In places the entire wall is of masonry; in others the space between the masonry faces is filled in with stones and earth. North of Peiping (Peking) great blocks of carefully cut granite are used, held in place by mortar superior to that made by the Chinese to-day. In other localities the Wall is faced with large bricks of a finer quality than most of those now manufactured in the Western World.

Good engineers designed the Wall. Rain water accumulating on the top is carried away by stone drains set at intervals of about 100 feet. Preservation of much of the Wall is due to foresight in providing these drains. More than 25,000 towers were built along the Wall, at intervals ranging from 100 yards to a mile.

Note: Students and teachers wishing additional information and pictures of China's Wall and Manchuria should consult: "A Thousand Miles along the Great Wall of China," *National Geographic Magazine*, February, 1923. See also: "Byroads and Backwoods of Manchuria," January, 1932; "Manchuria, Promised Land of Asia," October, 1929; and "The World's Greatest Overland Explorer," November, 1928. For photographs of the Great Wall see "Chinchowfu, Temporary Chinese 'Capital' of Manchuria," GEOGRAPHIC NEWS BULLETINS, week of December 14, 1931.

Bulletin No. 1, January 25, 1932.



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WHERE CHINA'S WALL WOULD RUN IF TRANSFERRED TO THE UNITED STATES

The sketch map shows the length and direction which the barrier would take if placed in the same latitude and on the same scale in the Western Hemisphere. Beginning at Philadelphia, it would extend far beyond Topeka, Kansas.

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The Unexplored Places of the Earth

THE airplane, the motor car, the motor boat, and other mechanical conveniences of recent years have helped wipe out the word "unexplored" from many large blank areas on the maps of the world.

Adventurous souls, sighing for new worlds to conquer, however, will find many regions throughout the earth which can be properly termed "unexplored," perhaps traversed only once or twice in history, and a few that have never been surveyed or seen by civilized man. In nearly every continent, perhaps just around the corner from old explorers' haunts, there are little-known regions that still beckon persuasively to explorers.

A Continent Awaits Survey

Unquestionably the largest unexplored spot in the world to-day lies in the continent of Antarctica. The South Pole has been reached thrice, and much of the Antarctic coast line has been seen from the decks of scientists' ships, whalers, and airplanes, but, of the interior, only the pie-shaped sector leading inland from the vicinity of Ross Sea has been explored. This was the highroad of Amundsen, Scott and Byrd. Antarctica remains the greatest stronghold of Nature against the curiosity of man.

Next largest, as might be expected, lies at the opposite end of the earth—that part of the Arctic Ocean between the airship *Norge's* path, on its flight over the North Pole, and the coast of Siberia. It measures about 900 miles long and 400 miles wide, with an area about the size of Texas. One or two more Polar expeditions would wipe out this last big Arctic blind spot. No land is expected there, but science would like some soundings to complete studies now being made.

Bertram Thomas cut a path through the largest unexplored bit of land outside the Polar regions during 1931 when he crossed the unknown Arabian Desert, from the Arabian Sea to the Persian Gulf. Hostile Arabs and extreme aridity kept it a region of mystery, and while Mr. Thomas has succeeded in traversing it, much of it remains unseen, and much work awaits explorers and geographers.

Greenland Still Little Known

The interiors of Greenland and of the large Arctic islands to the west of it are perhaps the next largest unknown areas. During 1931 several expeditions of scientists studied Greenland, the world's largest island, and data were obtained which indicate that it is a vast ice-filled bowl, surrounded by high mountains, and that the Ice Cap is 9,000 feet thick in the center. Central Greenland has been crossed several times, and its interior has always revealed the same monotonous ice and snow fields. But, for the explorer seeking large unknown land areas within reach of civilization, Greenland offers several patches, larger than New England, which have never been seen.

South America possesses four good-sized areas which have only been skirted by the white man—the vast region at the headwaters of the northern branches of the Amazon River; the Chaco between Paraguay and Bolivia; the Matto Grosso plateau in central Brazil, and the Patagonian Ice Cap in southern Chile.

During 1931 the explorations of Ernest G. Holt, who headed a National Geographic Society expedition, cleared up many mysteries of the Venezuela-Brazil border country. Parts of Matto Grosso and the Chaco were also penetrated. But from remote sections of Peru, Ecuador and Bolivia still come fantastic stories of unknown tribes, ancient cities and vast ruins in places yet unvisited by the white man. Of the Patagonian Ice Cap, largest outside the Polar regions, nothing is known.

Australia's Primitive "Out Back"

Australia's biggest blind spot, the arid central regions, was reduced considerably during the last year by an aerial survey party which mapped some 40,000 square miles. But a great deal of it—a region of pink lizards, salt lakes, fantastic mountains, and grass which grows only once in six years—is still a primitive unseen "Never, Never Land" which the Australians call "out back."

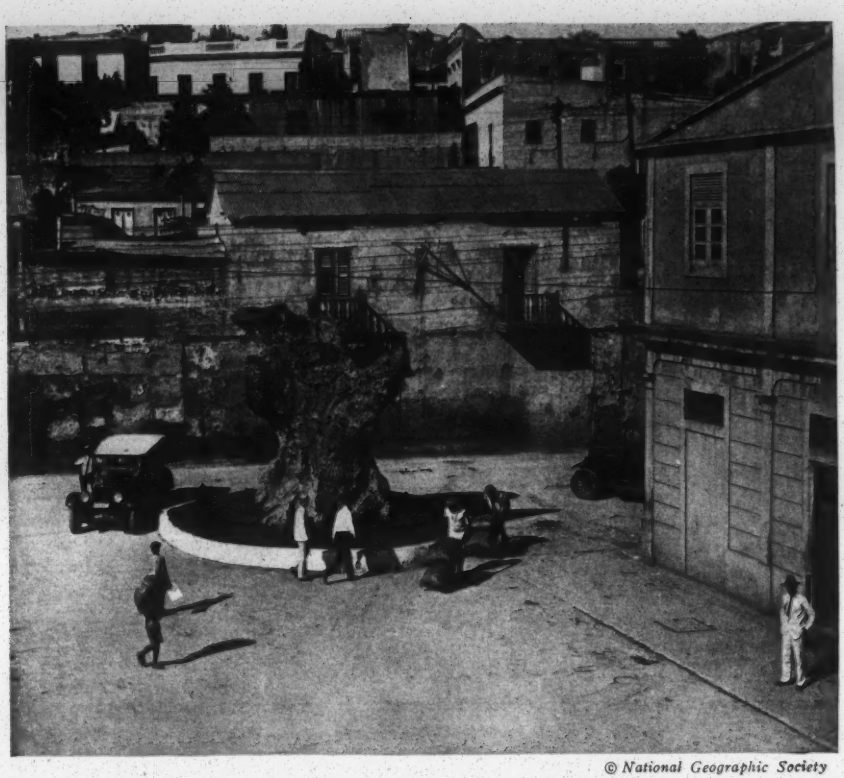
Africa is still "dark" in spots. Most of Africa's jungle has been penetrated, at one time or another, by explorers, but there are still some areas in the Belgian Congo and in the Chad where the rivers must be dotted for lack of more exact information about their true courses. The largest unknown area in Africa lies in that part of the Sahara Desert where Egypt, Anglo-

It was off the northern coast of the Island of Santo Domingo, or Haiti, near the city of Cap Haitien, that the original *Santa Maria* was wrecked.

Modern Huelva, just around the corner from Palos, is a thriving city of 30,000 inhabitants, with an active trade in copper and sulphur ores, and in tunny and sardine fishing. At flood-tide the biggest ocean vessels may ascend the Odiel River to its wharves.

Note: Southern Spain, a land of song and sunshine, is described in: "Seville, More Spanish Than Spain," and "On the Bypaths of Spain," *National Geographic Magazine*, March, 1929; and "Adventurous Sons of Cadiz, August, 1924. For Santo Domingo see: "Hispaniola Rediscovered," January, 1931.

Bulletin No. 2, January 25, 1932.



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THE "HITCHING POST" OF COLUMBUS ON A SANTO DOMINGO DOCK

According to tradition, the discoverer moored his ship to a ceiba tree, the remains of which may still be seen near the docks of Santo Domingo City. The tree was living until recently, when paving operations in connection with new water-front improvements killed it. The stump has been built up with concrete into a reproduction of the original.

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A Bobbie Burns Pilgrimage

THE birthday of Robert Burns, January 25, is an appropriate occasion to consider the works and the homeland of one of the greatest of lyric poets. Almost everyone is familiar with the poems of the bard of Ayr, but the Burns country in Scotland is a little off the beaten tourist track.

Those who make pilgrimages to the scenes of Burns' life usually begin near Ayr, where the poet was born, and end at Dumfries, where he died. "Ellisland," the Burns homestead near Dumfries, recently presented to the British nation as a memorial to the poet, gets the lion's share of attention.

Cottage Was a "Poet's Choice"

Burns built the farm cottage ("Ellisland") himself and moved thither with his young wife, full of high hopes. The land, however, was said to be a "poet's choice," beautiful beyond description, though too poor for agriculture. The venture was a financial failure but rich in poetic results. It was there that Burns wrote "Auld Lang Syne" and "Tam O'Shanter."

It is a sign of progress that modern agricultural methods have rendered the estate prosperous, at least as far as outward signs indicate. Over a century and a quarter of careful cultivation have left their mark.

The present farmhouse, into which much of the original Burns cottage is thought to have been incorporated, looks out upon one of the pleasantest landscapes in all the southwest corner of Scotland, rich alike in beauty and in history.

This region is watered by the River Nith, one of whose branches is the Afton, of poetic memory, which still flows in gentle clearness among its "green braes." Over the near-by hills Bruce and Wallace crossed and recrossed in their many wanderings, leaving a rich store of memories behind them. Some of the country villages gave shelter to Mary Stuart in one of her flights across the land.

In a plain-looking farmhouse near the Nith, Thomas Carlyle was married. Nithdale indeed is a hallowed district in the light of its past.

"Bonnie Braes" of Maxwellton

Within a short distance of "Ellisland" lie the "bonnie braes" of Maxwellton, scene of the wooing of Annie Laurie. Tradition states that fickle Annie proved unfaithful to her Jacobite poet lover and married the lord of broad acres some miles away.

Not far across country are the ruins of Lag Tower, castle of Sir Walter Scott's "Red Gauntlet." This gloomy relic and memories of its master still make their impression on the country peasantry.

While Burns was building his farmhouse at "Ellisland" he lived in a small hut close by another old tower called "The Isle," dating from the sixteenth century. Lonely without his young wife, who had been left at home till the new nest was prepared, the poet writes discouragingly of his life in the tower hut. It seemed to stand as a sort of symbol of loneliness to him.

The farm cottage of his own building, however, finished soon after the success of the early editions of his poems, was the emblem of future success, as a poet, if not as a farmer. Being the scene of Burns' mature labors, the estate of his own

Egyptian Sudan and Italian Libya come together. Other little-known regions may be found in Rio de Oro, Eritrea, eastern Angola, and Italian Somaliland.

Only nomadic tribes have seen very much of the Arctic coast of Siberia, one of the world's coldest places. Between the main river systems of northern Siberia stretch vast frozen tundras unvisited by man. Parts of Tibet and parts of the Desert of Gobi have not yet been seen by white man. Mt. Everest remains unconquered. The interior of the island of New Guinea, an area of almost 50,000 square miles, is still largely a virgin wilderness. Airplanes have flown over some of it, but of the jungle tribes living in the center of this great island little is definitely known. The Celebes is another island of mystery.

The largest unknown expanses in North America are in Canada and Labrador. Much of northern Canada is an unbroken wilderness which has only been crisscrossed here and there by trappers' trails, and by occasional airplane flights, such as that of the Lindberghs' last summer. The airplane has erased many blank spots from the map of the Ungava country in northern Quebec, the peninsula between Labrador and Hudson Bay, but areas as large as Connecticut or Delaware still have not felt the tread of white men's feet.

Note: See also "In Humboldt's Wake," *National Geographic Magazine*, November, 1931; "Sailing Forbidden Coasts," September, 1931; "Glories of Minya Konka," October, 1930; "The Conquest of Antarctica by Air," August, 1930; "Seeking the Mountains of Mystery," February, 1930; "Into Primeval Papua by Seaplane," September, 1929; "By Coolie and Caravan Across Central Asia," October, 1927; "Through the Great River Trenches of Asia," August, 1926; "Exploring the Valley of the Amazon in a Hydroplane," April, 1926; and "A Visit to Three Arab Kingdoms," May, 1923.

Bulletin No. 3, January 25, 1932.

© *Photograph by Dr. J. Jeswiet*

ONE REASON WHY CENTRAL NEW GUINEA IS MARKED "UNKNOWN"

Some of the plants of this vast East Indian island are as savage-looking as its head-hunting inhabitants.

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Peshawar, India's Doorway to Afghanistan

REPORTS from Peshawar add new woes to troubled Mother India's burden. Native tribesmen of the northwest frontier provinces, the "Balkans of India," began a march on the city of Peshawar, and Indian troops were forced to repel some 2,000 of them on the Bannu Road by gunfire.

Sixteen gates penetrate the massive mud and brick wall that surrounds Peshawar. The main gate to Afghanistan, the so-called Kabul gate, leads to the Street of Story Tellers, a wide thoroughfare where a few bicycles and shops displaying European merchandise lend a touch of the West to an Oriental city.

An Asiatic Melting Pot

But stroll down the Street of Story Tellers for a block or two, and fellow pedestrians leave little, if any, impression of the West. In the crowded thoroughfare one rubs elbows with an Asiatic "League of Races." There are hawk-nosed Pathans with scarfs binding generous heads of hair; tall, bronzed Rajputanis from neighboring Indian regions, in brilliant turbans; dusty, almond-eyed Uzbegs fresh from a trek over the long, monotonous caravan route from Central Asia; fierce-looking, bearded Afridi, the so-called wild men of the Indian and Afghan hills; keen-eyed Hindu traders from the south of India who are not welcome to the Pathan Moslems; Jews who may be distinguished by the corkscrew fashion in which they "do up" their hair; swarthy natives from the remote recesses of the Pamirs, and Persians.

If the traveler steps to the left or right of the Street of Story Tellers, he is lost in a labyrinth of truly Oriental byways, twisting and turning between rows of shabby buildings. Many of the streets are darkened by upper stories which nearly meet overhead. Grim-faced men stride past groups of playing children; but few women, particularly Moslem women, pass over the thresholds of their homes. Their open-air living quarters are atop their houses, where a fence hides them from the gaze of pedestrians.

Taken as a whole, Peshawar is drab to the foreigner, though to the natives of the city and the near-by region it is the place to have a good time. As the Moslem of the hills anticipates one trip in his life to Mecca, he also anticipates, almost with equal joy, an annual trip to Peshawar to share in its gay native life.

Din of Hammering and Yelling

The Peshawar bazaars, which are famous the world over, are magnets for both natives and visitors. They are like huge department stores spread over a wide area with each department owned by several shopkeepers. In the shoe "department" one can buy footgear ranging from a pair of the cheapest sandals to a pair of delicate, gold-embroidered slippers. Near-by are the shops where the work of Peshawar's local artists is displayed in objects of carved ivory and wood, and embroidery.

Many of the articles on sale are produced in the cramped quarters of bazaar shops. The monotonous tapping of the brass-workers' hammers, as they work sheets of shiny brass into trays, bowls, etc., adds to the din of argument, loud conversation, cries of beggars and itinerant venders, and the boisterous bickering between customers and shopkeepers.

Costumes form a riot of color as pedestrians surge through the bazaar streets

planning forms an appropriate gift to the British nation to be preserved as a shrine for Burns pilgrims from all over the world.

One of the finest collections of Robert Burns' writings, and books relating to Burns and the Burns country, is contained in the Scottish Rite Temple in Washington, D. C. With 5,500 volumes this "Burnsiana" is exceeded in size only by two others in Scotland. The collection is available to qualified research workers and students of Burns.

In addition to books, the collection also includes five busts of the poet, 150 engravings, and a grandfather's clock and table once owned by Burns. It is housed in a special room on the ground floor of the Temple.

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THE SCOTTISH RITE TEMPLE IN WASHINGTON, D. C.

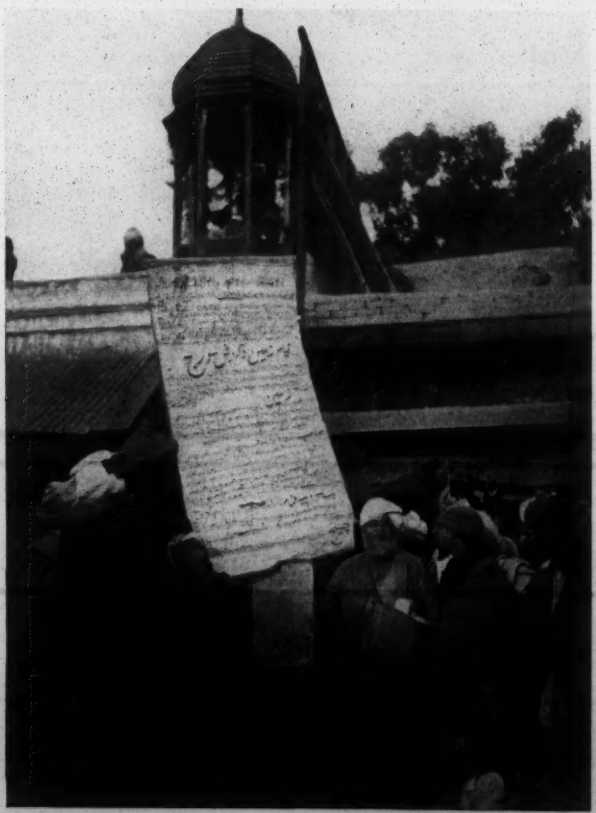
In a special room within this monumental structure is the largest collection of Burnsiana—writings of Burns and books about him—in this country. The Temple, one of the showplaces of the National Capital, is said to be reminiscent of the Mausoleum of Halicarnassus, one of the Seven Wonders of the Ancient World. The two colossal sphinxes flanking the doorway are inscribed with Egyptian hieroglyphics and Phoenician characters.

from shop to shop. Those who are not on the go may be warming themselves with a cup of tea drawn from a huge, steaming samovar set in a cubby hole among the shops, while others are cooling themselves by eating bits of sherbet from the trays of sweetmeat venders.

European military and business men are kept contented by tennis, polo and other forms of diversion at the Cantonment, two miles from the old city.

Note: See also "The Citroën-Haardt Trans-Asiatic Expedition Reaches Kashmir," *National Geographic Magazine*, October, 1931; "The Empire of Romance—India," and "Through the Heart of Hindustan," November, 1921.

Bulletin No. 5, January 25, 1932.



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OLD-FASHIONED ASTRONOMY IN THE STREETS OF PESHAWAR, INDIA

For the price of four annas the "professor" in the white turban will explain, with the aid of his chart, just how the earth stands still and the sun revolves around it! Perhaps such charlatans gave to the main street of this Indian metropolis its name: "The Street of the Story Tellers."